



Congressional Budget Office

**Budgetary and Economic Outcomes
Under Paths for Federal Revenues and
Noninterest Spending Specified by
Chairman Price, March 2016**

March 2016

Notes

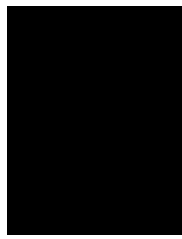
Unless otherwise indicated, the years referred to in describing budget numbers are fiscal years, which run from October 1 to September 30 and are designated by the calendar year in which they end; years referred to in describing economic output are calendar years.

Numbers in the text and tables may not add up to totals because of rounding.



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Budgetary and Economic Outcomes Under Paths for Federal Revenues and Noninterest Spending Specified by Chairman Price, March 2016

At the request of the Chairman of the House Budget Committee, Dr. Tom Price, the Congressional Budget Office has projected budgetary and economic outcomes under paths for federal revenues and spending (excluding interest payments) specified by the Chairman and his staff. The projections do not represent a cost estimate for legislation or an analysis of the effects of any specific policies. In particular, CBO has not considered whether the specified paths are consistent with the policy proposals or budget numbers that Chairman Price released on March 15, 2016, as part of his proposed budget resolution.

Summary

The projections in this report represent CBO's assessment of how federal debt and economic output would evolve from 2017 to 2040 under Chairman Price's specified paths for revenues and noninterest spending and, for comparison, under three alternative paths. The benchmark for those projections is CBO's extended baseline, which incorporates the assumption that current law generally remains unchanged. The extended baseline follows CBO's January 2016 10-year baseline projections through 2026 and then extends the baseline concept into later years.¹

The projections show how the total amounts of federal revenues and spending—and the resulting amount of federal borrowing—under those paths would affect the economy and how those macroeconomic effects, or feedback, in turn would affect the federal budget. The

projections do not show any other potential effects of any specific changes in policies relating to revenues and spending that might be used to generate those paths.

Paths Specified by Chairman Price and His Staff

The paths specified by Chairman Price envision cuts in spending (from the amounts projected to occur under current law) that begin in 2017 and grow successively larger in later years. The paths also envision revenues that are slightly higher than under current law and rise until they reach 19 percent of gross domestic product (GDP), in 2035, and then remain at 19 percent. Federal revenues would be lower than under the extended baseline after 2037. Under those paths, the cumulative deficit over the 2017–2026 period, excluding interest savings and macroeconomic effects, would be roughly \$6.7 trillion lower than in CBO's baseline. With interest savings included and the resulting macroeconomic effects incorporated, the budget would show a surplus beginning in 2026.

Federal debt held by the public as a share of GDP would fall to 57 percent in 2026 and to 22 percent in 2040 under the specified paths, CBO projects (see Figure 1). Over the next few years, economic output would be lower than under any of the other paths CBO considered because differences in federal spending and revenues would reduce total demand for goods and services. In the long term, output would be higher because less federal borrowing would free resources for private investment (see Figure 2).

The Extended Baseline and Three Illustrative Paths

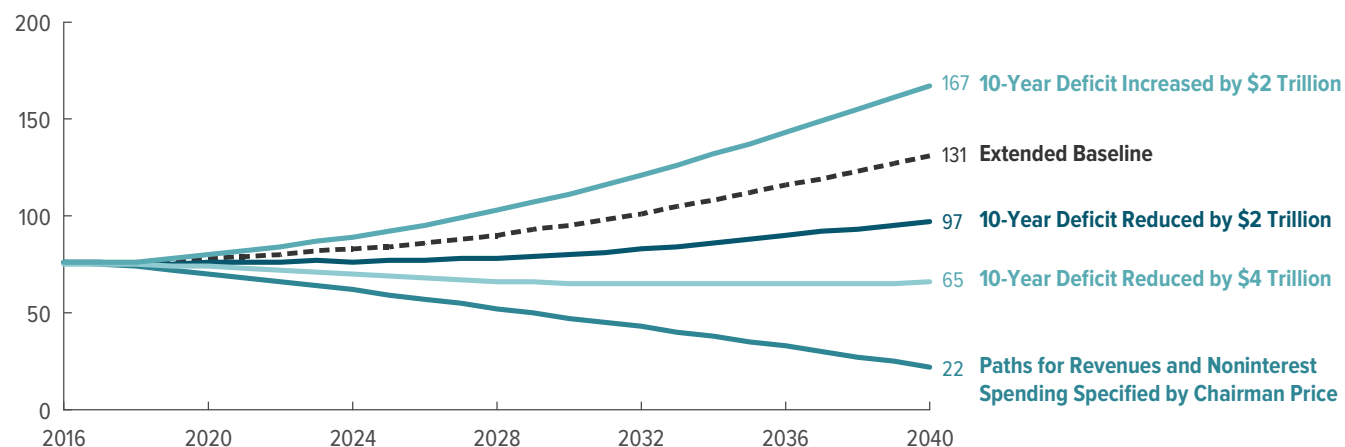
For comparison, in addition to the extended baseline, CBO also updated the estimated effects of two illustrative deficit reduction paths that it analyzed last June in

1. See Congressional Budget Office, *The Budget and Economic Outlook: 2016 to 2026* (January 2016), www.cbo.gov/publication/51129.

Figure 1.

Federal Debt Held by the Public Under Various Budget Scenarios, With Macroeconomic Effects, 2016 to 2040

Percentage of Gross Domestic Product, by Fiscal Year



Source: Congressional Budget Office.

These results account for the following macroeconomic effects (“feedback”): the ways in which changes in federal debt affect investment in capital goods (such as factories and computers), the ways in which changes in after-tax wages (resulting from changes in capital investment) affect the supply of labor, and the ways in which those economic effects in turn affect the federal budget. The analysis incorporates the assumption that the budget paths do not alter government investment’s contributions to future productivity and output; those contributions are assumed to reflect their past long-term trends.

The extended baseline generally reflects current law, following CBO’s 10-year baseline budget projections through 2026 and then extending the baseline concept for the rest of the long-term projection period. Projections under the extended baseline incorporate effects from changes over time in incentives to work and save under current law. The 10-year baseline used in this report consists of the projections for the budget and the economy that CBO released in January 2016.

The paths for revenues and noninterest spending specified by Chairman Price would reduce deficits (excluding interest payments) as a percentage of gross domestic product (GDP) by amounts that increase over time with respect to the extended baseline. The 10-year deficit reductions of \$2 trillion and \$4 trillion and the 10-year deficit increase of \$2 trillion with respect to CBO’s baseline are the cumulative changes between 2017 and 2026, excluding interest payments and macroeconomic effects. The reduction or increase in the deficit in 2026, expressed as a change of GDP without macroeconomic effects, is assumed to continue in later years. The macroeconomic effects of those paths include the short-term effects of changes in demand for goods and services and the long-term effects of changes in federal debt. However, because CBO did not analyze specific policies that might underlie those paths, the estimates do not incorporate effects from any differences in incentives to work or save that might stem directly from differences in policies in relation to those under the extended baseline.

*The 2015 Long-Term Budget Outlook.*² The agency also estimated the effects of a third illustrative path in which the cumulative deficit (excluding interest payments and macroeconomic effects) over the first 10 years of the projection exceeds the baseline deficit by an amount similar to that in the alternative fiscal scenario in *The 2015 Long-Term Budget Outlook.*³ Specifically, the

extended baseline and those three illustrative paths would have the following implications for federal debt, by CBO’s estimates:

2. See Congressional Budget Office, *The 2015 Long-Term Budget Outlook* (June 2015), www.cbo.gov/publication/50250.

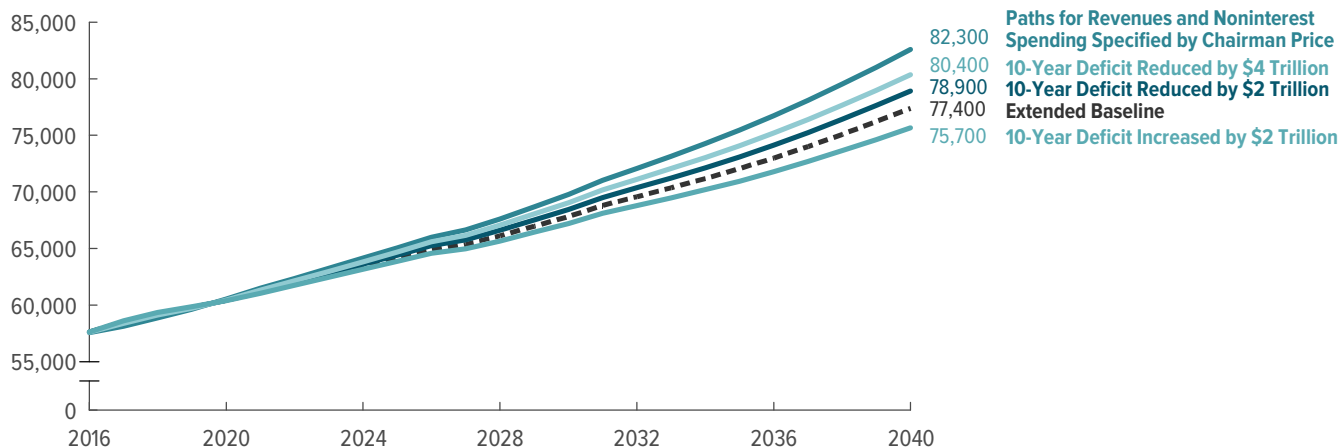
3. The alternative fiscal scenario incorporated several assumptions: that certain policies in place but scheduled to change under current law would continue, that some provisions of law that might be difficult to sustain for a long period would change, and that federal revenues and certain kinds of federal spending would remain at or near their historical shares of GDP.

- Under CBO’s *extended baseline*, federal debt held by the public would grow to 131 percent of GDP in 2040.
- The *–\$2 trillion path* would result in federal debt equal to 97 percent of GDP in 2040. Under that path, unspecified fiscal policies reduce the 10-year cumulative deficit by \$2 trillion (excluding interest payments and macroeconomic effects) from the deficit projections in the extended baseline. Also, the deficit reduction in the 10th year, as a percentage of GDP, continues in later years.

Figure 2.

Real Gross National Product per Person Under Various Budget Scenarios, 2016 to 2040

2016 Dollars, by Calendar Year



Source: Congressional Budget Office.

These results account for the following macroeconomic effects (“feedback”): the ways in which changes in federal debt affect investment in capital goods (such as factories and computers), the ways in which changes in after-tax wages (resulting from changes in capital investment) affect the supply of labor, and the ways in which those economic effects in turn affect the federal budget. The analysis incorporates the assumption that the budget paths do not alter government investment’s contributions to future productivity and output; those contributions are assumed to reflect their past long-term trends.

Unlike the more commonly cited gross domestic product, real (inflation-adjusted) gross national product includes the income that U.S. residents earn abroad and excludes the income that foreigners earn in the United States.

The 10-year baseline used in this report consists of the projections for the budget and the economy that CBO released in January 2016. For information about CBO’s analysis of the extended baseline and other paths considered here, see the notes to Figure 1.

- The *–\$4 trillion path*—defined in the same manner as the *–\$2 trillion path*, but with changes twice as large in each year—would result in federal debt amounting to 65 percent of GDP in 2040.
- The *+\$2 trillion path*—defined in the same manner as the *–\$2 trillion path*, but with increases in the deficit each year rather than decreases—would result in federal debt equal to 167 percent of GDP in 2040.

The amounts of federal debt and economic output estimated under current law and under all the budgetary paths in this report are highly uncertain. That uncertainty stems from the difficulties inherent in budgetary projections, even without regard to their macroeconomic effects, and from the difficulties in projecting the effects of federal fiscal policies on the economy—especially far into the future.

How CBO Analyzed the Effects of the Budgetary Paths

The short-term and long-term economic effects of changes in projected deficits would differ. Over the next few years, policy changes that would decrease federal

spending or increase taxes—and thus shrink budget deficits—would generally reduce total demand for goods and services. Therefore, such fiscal policies would reduce output and employment below the levels projected in CBO’s baseline. Policy changes that would increase federal spending or decrease taxes would generally have the opposite effect. In the long term, policy changes that would decrease budget deficits would lower the amount of federal debt held by the public from what it would otherwise be. Over time, smaller federal deficits and debt would leave more funds available for private investment, causing output to be higher than it would be otherwise. Larger federal debt would have the opposite effect, “crowding out” private investment and decreasing output.⁴

The estimated economic effects of the various budgetary paths incorporate no assumptions about the specific policies that might be adopted to produce those paths.

4. For a discussion of CBO’s analytical methods, see Congressional Budget Office, *How CBO Analyzes the Effects of Changes in Federal Fiscal Policies on the Economy* (November 2014), www.cbo.gov/publication/49494.

However, all paths for revenues and spending analyzed in this report would require major changes in current law. For example, under the paths specified by Chairman Price, by 2026 noninterest spending would be roughly 18 percent less than the amounts in the extended baseline. If that same proportional reduction had been applied in 2015, it would have represented a decrease of roughly \$600 billion in noninterest spending. The specific policies adopted to produce those future paths would affect overall economic output—not only by reducing federal borrowing but also by altering incentives to work and save and by altering federal investment and thus private-sector productivity. However, this analysis includes only the macroeconomic effects of changes in federal debt in relation to the extended baseline.

Because CBO did not analyze a set of policies underlying the specified paths, this analysis does not include the effects of any specific policies on output or the resulting feedback effects on the federal budget. CBO also did not analyze the effects of specific policies on other aspects of people's well-being.⁵ For any set of fully specified policies, if some of them increased incentives to work and invest, CBO would estimate that higher income resulting from those policies would feed back to the federal budget primarily by increasing federal revenues. If other policies lowered incentives to work and invest, those effects would reduce income and revenues, the agency estimates. Those policies also would affect people's well-being in various ways beyond affecting economic output. (For more information about CBO's analytical approach, see the appendix.)

What Would Outcomes Be Under Current Law?

Because they incorporate the assumption that current law generally continues without change, CBO's 10-year baseline budget projections serve as a benchmark against which to measure the potential effects of proposals that would alter federal taxes or spending. CBO published its most recent extended baseline projections in *The Budget and Economic Outlook: 2016 to 2026*.⁶ Those projections

follow CBO's January 2016 baseline projections through 2026 and then extend the baseline concept into later years, using the interest rates and growth rates for revenues and spending from the extended baseline in CBO's *2015 Long-Term Budget Outlook*.

Under the extended baseline, the total deficit is projected to grow from 2.5 percent of GDP in 2015 to 4.9 percent in 2026 and to larger percentages thereafter (see Table 1). Federal debt held by the public would grow from 74 percent of GDP in 2015 to 86 percent by 2026. In later years, debt would increase as a percentage of GDP by successively larger amounts, reaching 131 percent by 2040.

Those estimates of federal deficits and debt incorporate the budgetary feedback of the associated changes in economic conditions. Increased government borrowing would eventually reduce private investment in productive capital because the portion of total saving that investors used to buy Treasury securities would not be available to finance private investment. The result would be a smaller stock of capital and lower output and income in the long term than would otherwise be the case. Lower income would reduce tax revenues; by decreasing spending on health care and retirement programs over the long term, lower income would also reduce federal spending, though by less.⁷

6. See Congressional Budget Office, *The Budget and Economic Outlook: 2016 to 2026* (January 2016), www.cbo.gov/publication/51129. The economic projections underlying the extended baseline reflect legislation enacted in mid-December 2015 as well as economic developments through the end of the year. However, the budget projections in the extended baseline are based on the economic forecast CBO completed in early December because the agency did not have enough time to incorporate those later changes to its economic forecast into its budget projections. When the projections were released, a preliminary analysis suggested that if CBO had incorporated that updated economic forecast into its budget projections, revenues in the baseline would be between \$100 billion and \$200 billion (or 0.2 percent to 0.4 percent) higher over the 2016–2026 period than projected at that time. Projected outlays also would be affected, but probably not as much. CBO's next set of budget projections, due this month, will incorporate the later changes to the economic forecast as well as technical estimating changes that could be larger than those amounts, in either direction.

5. CBO does not analyze or prepare estimates of budget resolutions because they are targets for the Congress and its committees and do not contain legislative language for proposals whose budgetary effects can be estimated. For more on CBO's role in analyzing budget resolutions, see Congressional Budget Office, "CBO's Role in Budget Resolutions," *CBO Blog* (April 1, 2014), www.cbo.gov/publication/45216.

7. Federal spending would be lower if income was lower because Social Security benefits are linked to earnings and because total spending on health care tends to vary with total income over the long term. This analysis incorporates the assumption that changes in income do not affect other noninterest spending.

Table 1.

Outcomes Under Various Budget Scenarios, With Macroeconomic Effects, Selected Years, 2026 to 2040

Percentage of Gross Domestic Product, by Fiscal Year

	2026	2030	2035	2040
Revenues				
Extended Baseline	18.2	18.5	18.8	19.2
Paths of Revenue and Noninterest Spending Specified by Chairman Price	18.4	18.6	19.0	19.0
10-Year Deficit Reduced by \$2 Trillion	n.a.	n.a.	n.a.	n.a.
10-Year Deficit Reduced by \$4 Trillion	n.a.	n.a.	n.a.	n.a.
10-Year Deficit Increased by \$2 Trillion	n.a.	n.a.	n.a.	n.a.
Spending Excluding Interest Payments				
Extended Baseline	20.1	20.9	21.7	22.3
Paths of Revenue and Noninterest Spending Specified by Chairman Price	16.3	16.5	16.6	16.3
10-Year Deficit Reduced by \$2 Trillion	n.a.	n.a.	n.a.	n.a.
10-Year Deficit Reduced by \$4 Trillion	n.a.	n.a.	n.a.	n.a.
10-Year Deficit Increased by \$2 Trillion	n.a.	n.a.	n.a.	n.a.
Deficit (-) or Surplus Excluding Interest Payments				
Extended Baseline	-1.9	-2.4	-2.9	-3.1
Paths of Revenue and Noninterest Spending Specified by Chairman Price	2.0	2.1	2.4	2.7
10-Year Deficit Reduced by \$2 Trillion	-0.6	-1.0	-1.5	-1.6
10-Year Deficit Reduced by \$4 Trillion	0.8	0.3	-0.1	-0.2
10-Year Deficit Increased by \$2 Trillion	-3.3	-3.9	-4.4	-4.7
Total Deficit (-) or Surplus				
Extended Baseline	-4.9	-6.4	-7.8	-9.0
Paths of Revenue and Noninterest Spending Specified by Chairman Price	0.1	0.2	1.0	1.8
10-Year Deficit Reduced by \$2 Trillion	-3.2	-4.3	-5.1	-5.7
10-Year Deficit Reduced by \$4 Trillion	-1.5	-2.3	-2.7	-2.8
10-Year Deficit Increased by \$2 Trillion	-6.7	-8.6	-10.6	-12.7
Federal Debt Held by the Public				
Extended Baseline	86	95	112	131
Paths of Revenue and Noninterest Spending Specified by Chairman Price	57	48	36	22
10-Year Deficit Reduced by \$2 Trillion	77	80	88	97
10-Year Deficit Reduced by \$4 Trillion	68	65	65	65
10-Year Deficit Increased by \$2 Trillion	95	111	137	167

Source: Congressional Budget Office.

These results account for the following macroeconomic effects (“feedback”): the ways in which changes in federal debt affect investment in capital goods (such as factories and computers), the ways in which changes in after-tax wages (resulting from changes in capital investment) affect the supply of labor, and the ways in which those economic effects in turn affect the federal budget. The analysis incorporates the assumption that the budget paths do not alter government investment’s contributions to future productivity and output; those contributions are assumed to reflect their past long-term trends.

The 10-year baseline used in this report consists of the projections for the budget and the economy that CBO released in January 2016. For information about CBO’s analysis of the extended baseline and other paths considered here, see the notes to Figure 1.

n.a. = not applicable because the effects of the assumed deficit reductions on revenues and outlays are not specified.

Even with the reductions in output and income that would occur because of rising debt, the continued growth of productivity projected under the extended baseline would make future output and income higher than they are now. Expressed in 2016 dollars, real (inflation-adjusted) gross national product (GNP), per person, is projected to be about \$59,000 in 2017, about \$65,000 in 2026, and about \$77,000 in 2040 under the extended baseline (see Figure 2 on page 3).⁸ In assessing the long-term effects of tax and spending policies on output, CBO focuses on effects on GNP rather than on the more commonly cited GDP. GNP includes the income that U.S. residents earn abroad and excludes the income that foreigners earn in the United States; thus, GNP is a better measure than GDP of the resources available to U.S. households.⁹

Although output and income would be higher in the next few decades than they are now, the high and rising debt would have serious negative consequences for the budget and the nation:

- When interest rates increase from where they are now to more typical rates, federal spending on interest payments would rise substantially.
- Because federal borrowing reduces total saving in the economy over time, the nation's capital stock would ultimately be smaller than it would be if debt was smaller, and productivity and total wages would be lower.

8. CBO's current projections of real GNP per person under the extended baseline are lower in all years than the amounts projected in *The 2015 Long-Term Budget Outlook*, primarily because CBO now projects slower growth in output over the next decade. See Congressional Budget Office, *The 2015 Long-Term Budget Outlook* (June 2015), www.cbo.gov/publication/50250.

9. The difference between GNP and GDP is particularly important in analyzing the long-term effects of fiscal policies. When the federal government runs larger budget deficits, more capital tends to flow into the United States from other countries, offsetting some of the crowding out of investment that government borrowing produces. However, over time, a growing amount of income must be paid to foreign investors as profits or interest on that invested capital. Therefore, other things being equal, increases in debt reduce GNP (and the income of U.S. households) more than they reduce GDP, and decreases in debt increase GNP more than GDP. In the short run, by contrast, fiscal policies affect GNP and GDP similarly through their effects on total demand.

- Lawmakers would have less flexibility to use tax and spending policies to respond to unexpected challenges.
- The likelihood of a fiscal crisis in the United States would increase.
- The risk would be greater that investors would become unwilling to finance the government's borrowing unless they were compensated with very high interest rates. If that happened, interest rates on federal debt would rise suddenly and sharply.

What Paths for Federal Revenues and Noninterest Spending Did Chairman Price Specify?

Chairman Price and his staff specified the following paths for federal revenues and noninterest spending for CBO to analyze:

- Annual revenues are slightly higher than the amounts in CBO's extended baseline until they reach 19 percent of GDP and then remain at 19 percent of GDP each year thereafter.
- Noninterest spending falls over time in relation to the size of the economy. As a percentage of GDP, noninterest spending equals about 19 percent in 2017, generally declines over the following decade, and then hovers around 17 percent in most years thereafter.¹⁰

Compared with the baseline CBO published in January, those paths would increase revenues slightly during the 2017–2026 period and would reduce cumulative spending on programs and activities other than interest payments by 14 percent during those years. Over that 10-year period, the cumulative deficit (excluding interest savings and macroeconomic effects) would be about \$6.7 trillion less than in CBO's baseline. Under those specified paths, federal revenues would be lower than under the extended baseline after 2037, and federal noninterest spending also would be lower—by an increasing amount each year—starting in 2017 (see Figure 3).

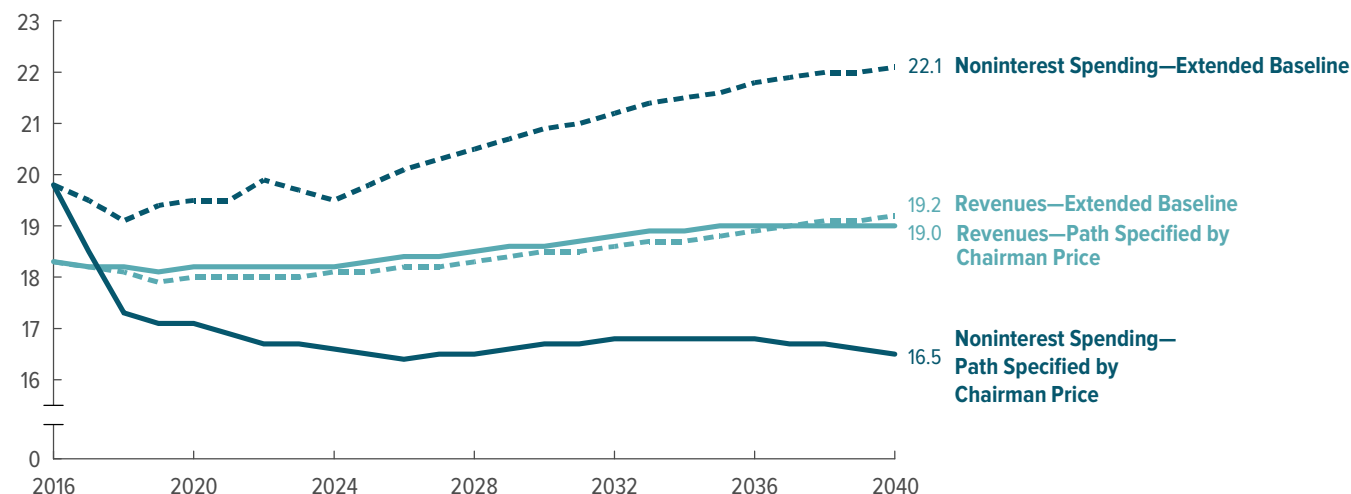
Chairman Price's specified paths for revenues and noninterest spending would require major changes in current law. In particular, by 2026 noninterest spending

10. For more details, see the supplemental material posted with this report on CBO's website (www.cbo.gov/publication/51260).

Figure 3.

Revenues and Noninterest Spending Under Paths Specified by Chairman Price and Under CBO's Extended Baseline, Without Macroeconomic Effects, 2016 to 2040

Percentage of Gross Domestic Product Under the Extended Baseline, by Fiscal Year



Source: Congressional Budget Office.

The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2026 and then extending the baseline concept for the rest of the long-term projection period. The extended baseline without macroeconomic effects incorporates the assumptions that macroeconomic conditions are consistent with those in the 10-year baseline budget projections through 2026—in later years generally reflecting the economic experience of the past few decades—and that estimated revenues and spending are consistent with those economic conditions. The 10-year baseline used in this report consists of the projections for the budget and the economy that CBO released in January 2016. For information about CBO's analysis of the extended baseline and other paths considered here, see the notes to Figure 1.

The paths for revenues and noninterest spending specified by Chairman Price reduce deficits (excluding interest payments) as a percentage of gross domestic product by amounts that increase over time with respect to the extended baseline. The specified paths do not include effects from differences in economic conditions in relation to those assumed in the extended baseline without macroeconomic effects.

would be roughly 18 percent less than the amount in the extended baseline. If that same proportional reduction had been applied in 2015, it would have represented a decrease of roughly \$600 billion in noninterest spending. By 2040, the corresponding change would be a reduction of about 25 percent (or about \$900 billion if applied in 2015). Although revenues in 2026 would be slightly higher under Chairman Price's specified paths than under the extended baseline, they would be about 1 percent lower by 2040. If that same proportional reduction had been applied in 2015, it would have represented a decrease of about \$40 billion in revenues.

What Would Budgetary and Economic Outcomes Be Under the Paths Specified by Chairman Price?

Incorporating the interest savings and macroeconomic effects that would result from the paths for federal revenues and noninterest spending specified by

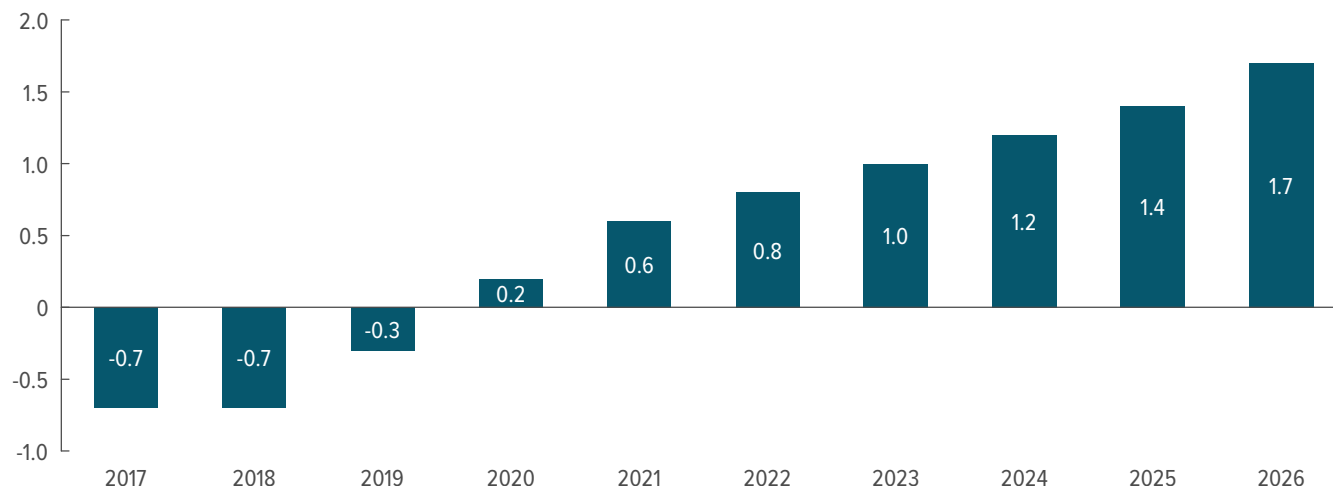
Chairman Price and his staff, the budget would show a surplus beginning in 2026. Federal debt held by the public as a share of GDP would fall to 57 percent in 2026 and to 22 percent in 2040, CBO projects—compared with 86 percent and 131 percent, respectively, under the extended baseline (see Table 1 on page 5). Declining federal debt in relation to GDP would have additional positive consequences beyond the effects on output and on the budget. For example, because federal debt would be much lower than under the extended baseline, policy-makers would have more leeway to use tax and spending policies to respond to economic downturns or wars, and the risk of a fiscal crisis would be much smaller.

From 2017 to 2019, real GNP per person would be lower under Chairman Price's specified paths than under the extended baseline, CBO estimates, because differences in federal spending and revenues in comparison with those under current law would dampen overall demand for

Figure 4.

Effects of the Paths for Revenues and Noninterest Spending Specified by Chairman Price on Real Gross National Product per Person in Relation to CBO's Extended Baseline, 2017 to 2026

Percentage Difference From CBO's Extended Baseline, by Calendar Year



Source: Congressional Budget Office.

The macroeconomic effects of the paths for revenues and noninterest spending specified by Chairman Price include the short-term effects of changes in demand for goods and services and the long-term effects of changes in federal debt. Because CBO did not analyze specific policies that might underlie those paths, the estimates do not incorporate effects from any differences in incentives to work and save, or any differences in government investment, stemming from the policies that might be adopted to achieve those paths.

Unlike the more commonly cited gross domestic product, real (inflation-adjusted) gross national product includes the income that U.S. residents earn abroad and excludes the income that foreigners earn in the United States.

The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2026 and then extending the baseline concept for the rest of the long-term projection period. Projections under the extended baseline incorporate effects from changes over time in incentives to work or save under current law. The 10-year baseline used in this report consists of the projections for the budget and the economy that CBO released in January 2016.

The paths for revenues and noninterest spending specified by Chairman Price reduce deficits (excluding interest payments) as a percentage of gross domestic product by amounts that increase over time with respect to the extended baseline.

goods and services (see Figure 4).¹¹ Because CBO did not analyze specific policies that might underlie those paths, the agency relied on the same assumption that it used in *The 2015 Long-Term Budget Outlook* to estimate the effects of unspecified policies underlying illustrative deficit reduction paths. According to that assumption, each \$1 of real deficit reduction would—when short-term interest rates are at or very near zero and monetary policy is thought to be constrained—reduce real output by \$1 over several quarters. The effect on real output is estimated to be smaller over time as short-term interest rates are expected to rise and monetary policy is projected to

have more flexibility in responding to reductions in aggregate demand.

Starting in 2020, real per capita GNP would be higher under Chairman Price's specified paths than under the extended baseline—by 1.7 percent in 2026 and by roughly 6 percent in 2040 (see Table 2). GNP would be higher in the long term because smaller federal deficits and debt would lead to both an increase in private investment and a decrease in net inflows of capital from foreign countries. Therefore, domestic production would increase and net payments of interest and profits to foreigners would decrease, compared with what would occur under current law. Real average family income, before federal transfer payments and taxes, also would be higher than under the extended baseline. The effects would differ among families, however, with some receiving more income and others potentially receiving less. Effects on family income after taking into account federal transfer

11. Throughout this report, differences in real GNP per person—which Figure 4 shows—are assumed to be proportional to the estimated differences in real GNP. CBO has no basis for estimating any changes in the size of the population arising from the paths for revenues and noninterest spending specified by Chairman Price or from any other paths considered.

Table 2.

Effects of Various Budget Scenarios on Real Gross National Product per Person in Relation to CBO's Extended Baseline, 2026 and 2040

Percentage Difference, by Calendar Year

	2026	2040
Paths for Revenues and Noninterest Spending Specified by Chairman Price		
Central estimate	1.7	6
Likely range	0.8 to 2.4	3 to 10
10-Year Deficit Reduced by \$2 Trillion		
Central estimate	0.5	2
Likely range	0.3 to 0.8	1 to 3
10-Year Deficit Reduced by \$4 Trillion		
Central estimate	1.0	4
Likely range	0.5 to 1.5	2 to 6
10-Year Deficit Increased by \$2 Trillion		
Central estimate	-0.5	-2
Likely range	-0.3 to -0.8	-1 to -4

Source: Congressional Budget Office.

These results account for the following macroeconomic effects ("feedback"): the ways in which changes in federal debt affect investment in capital goods (such as factories and computers), the ways in which changes in after-tax wages (resulting from changes in capital investment) affect the supply of labor, and the ways in which those economic effects in turn affect the federal budget. The analysis incorporates the assumption that the budget paths do not alter government investment's contributions to future productivity and output; those contributions are assumed to reflect their past long-term trends.

Unlike the more commonly cited gross domestic product, real (inflation-adjusted) gross national product includes the income that U.S. residents earn abroad and excludes the income that foreigners earn in the United States.

The 10-year baseline used in this report consists of the projections for the budget and the economy that CBO released in January 2016. For information about CBO's analysis of the extended baseline and other paths considered here, see the notes to Figure 1.

The central estimate uses values at the midpoints of estimated ranges for key inputs. The likely range reflects estimates incorporating alternative assessments of two key parameters in the analysis: private investment's responsiveness to changes in government borrowing and the labor supply's responsiveness to changes in after-tax wages. That range is intended to cover roughly the middle two-thirds of the likely values for those parameters. This type of analysis is sensitive to many factors other than alternative assessments of those parameters.

payments and taxes would depend on how the particular policies adopted to produce the specified paths compared with the policies in the extended baseline. Moreover, the specific policies adopted would affect people's well-being in various ways beyond the effects on economic output. Because CBO did not analyze a set of policies underlying the specified paths, this analysis includes the macroeconomic effects of changes in federal debt but not the effects of any specific policies on output or other aspects of people's well-being.

Significantly changing the paths for revenues and noninterest spending from those projected to occur under current law would almost certainly alter people's incentives to work and save and change the amount of federal investment, thereby affecting output. However, the estimates presented here do not incorporate effects of such differences in people's incentives to work or save because CBO did not analyze particular policies that

might produce the specified paths. CBO assumed, for example, that effective marginal tax rates (the percentage of an additional dollar of income that is unavailable to an individual because it is paid in taxes or offset by reductions in benefits from government programs) would be the same under the specified paths and under the extended baseline. CBO's analysis also incorporates the assumption that the paths would not change federal investment's contributions to future productivity and output; those contributions are assumed to reflect their past long-term trends.¹²

12. For discussion of the long-term economic benefits of federal investment, see Congressional Budget Office, *Federal Investment* (December 2013), www.cbo.gov/publication/44974. See also Congressional Budget Office, *How CBO Analyzes the Effects of Changes in Federal Fiscal Policies on the Economy* (November 2014), pp. 9–10, www.cbo.gov/publication/49494.

What Would Outcomes Be Under Other Revenue and Spending Paths?

For comparison with the budgetary and economic outcomes under the extended baseline and under the paths specified by Chairman Price and his staff, CBO updated the estimated effects of the two illustrative deficit reduction paths analyzed in *The 2015 Long-Term Budget Outlook*:

- The *–\$2 trillion path*, in which unspecified fiscal policies reduce the 10-year cumulative deficit by \$2 trillion (excluding interest payments and macroeconomic effects) from the deficit projections in the extended baseline and in which the deficit reduction in the 10th year, as a percentage of GDP, continues in later years; and
- The *–\$4 trillion path*, defined in the same manner as the *–\$2 trillion path*, but with changes twice as large in each year.

CBO also analyzed the effects of a third illustrative path, the *+\$2 trillion path*, in which the cumulative deficit (excluding interest payments and macroeconomic effects) over the first 10 years of the projection exceeds the baseline deficit by \$2 trillion, an amount similar to that in the alternative fiscal scenario presented in *The 2015 Long-Term Budget Outlook*.¹³

Compared with the extended baseline, the two illustrative paths that involve smaller deficits would reduce output over the next three years, CBO estimates, reflecting their short-term effect of reducing the demand for goods and services. After that, the continuation of smaller deficits and lower debt would increase output, reflecting the long-term effect of deficits and debt on national saving and investment. The *+\$2 trillion path* would have the opposite consequences. Like the other projections in this report, the estimated budgetary and economic effects of those paths are highly uncertain; the results reported here

are CBO's central estimates. For simplicity, and to avoid presuming which policies might be chosen to reduce or increase the deficit, CBO analyzed the illustrative deficit paths without specifying their underlying tax and spending policies. As with the paths specified by Chairman Price, particular policies to change the path of budget deficits from the amounts projected to occur under current law would almost certainly involve changing incentives to work or save and federal investment's contribution to economic output. If that happened, the overall economic effects of the policies would depend both on the changes in federal borrowing and on the policies' other consequences.

Two Illustrative Paths for Deficit Reduction

For the *–\$2 trillion* and the *–\$4 trillion* paths, CBO assumed that deficits would gradually decrease from what they would be under current law so that the total deficit over the 2017–2026 period (excluding interest payments and macroeconomic effects) would be either \$2 trillion or \$4 trillion smaller than under the extended baseline. Those amounts are less than the roughly \$6.7 trillion in deficit reduction over that period envisioned in the paths specified by Chairman Price. CBO assumed that the deficit reduction under the two illustrative paths would begin in 2017 and that after 2026 the decrease in annual deficits in relation to the extended baseline would continue at the same percentage of GDP (without macroeconomic effects) projected for 2026.

With macroeconomic effects incorporated,

- The *–\$2 trillion path* would cause federal debt held by the public to remain roughly constant in relation to GDP for the next decade and then to rise more slowly than the increase projected under current law. As a result, debt would reach 77 percent of GDP in 2026 and then continue to rise, reaching 97 percent in 2040, CBO projects (see Table 1 on page 5).
- The *–\$4 trillion path* would cause debt to decline steadily over the next decade, with respect to the size of the economy, to 68 percent of GDP in 2026. After falling to 65 percent in 2030, debt as a share of GDP would remain roughly constant through 2040, though still high by historical standards.

Under those two deficit paths, real GNP would be lower over the next three years than under the extended baseline because the deficit reductions would reduce the demand for goods and services in the short term (see Figure 2 on

13. That scenario increased the 10-year cumulative deficit by about \$2 trillion (excluding increases in interest and macroeconomic effects) over amounts in the extended baseline. For more details, see Congressional Budget Office, *The 2015 Long-Term Budget Outlook* (June 2015), Chapter 6, www.cbo.gov/publication/50250. Recently, some policies assumed in that alternative fiscal scenario were permanently enacted in legislation, meaning that an updated version of that scenario would have a considerably smaller effect on deficits in relation to the extended baseline. So instead, CBO chose to present the budgetary effects of an illustrative path that, with unspecified fiscal policies, increases the cumulative deficit (excluding interest) by \$2 trillion over the next 10 years in relation to the extended baseline.

page 3). Under the $-\$2$ trillion path, real GNP per person would be an estimated 0.1 percent lower between 2017 and 2019 than that under current law. Under the $-\$4$ trillion path, real GNP per person would be an estimated 0.3 percent lower in 2017 and 2018 and 0.1 percent lower in 2019. Because CBO did not identify or analyze policies that might underlie those paths, the agency used the same assumptions about how much each dollar of deficit reduction would affect overall demand that it used to analyze Chairman Price's specified paths.

Starting in 2020, real per capita GNP would be higher under both illustrative deficit reduction paths than under the extended baseline. Real GNP per person in 2026 would be 0.5 percent higher under the $-\$2$ trillion path and 1.0 percent higher under the $-\$4$ trillion path (see Table 2). Those percentage increases would grow as the lower deficits and debt under both paths had beneficial effects on the economy. Even so, real GNP per person in 2026 and later years would be lower under each of those illustrative budgetary paths than under Chairman Price's specified paths (see Figure 2 on page 3) because debt held by the public would be higher under the illustrative paths than under Chairman Price's specified paths.

Illustrative Path for Deficit Increase

Under the $+\$2$ trillion path, with macroeconomic effects incorporated, federal debt held by the public would increase to 95 percent of GDP by 2026 and to much larger amounts in later years, CBO projects (see Table 1 on page 5).

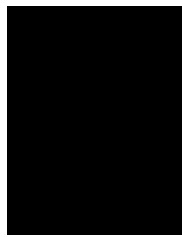
Compared with the extended baseline, real GNP would be higher under the $+\$2$ trillion path over the next three years and then lower in later years. The deficit increases incorporated in that path would raise the demand for goods and services in the short term, making real GNP per person higher than that under current law by an estimated 0.1 percent between 2017 and 2019. Starting in 2020, real GNP per person would be lower, CBO projects—by 0.5 percent in 2026 and by increasingly greater percentages thereafter (see Figure 2 on page 3 and Table 2).

The large and growing amount of federal debt that CBO projects under that illustrative path would have significant negative consequences besides its effects on output and the economic feedback on the budget. Higher federal spending for interest on the debt would require larger changes in tax and spending policies to meet any chosen targets for budget deficits and debt. At the same time, the government would have less flexibility to use tax and spending policies to respond to unexpected challenges, such as economic downturns or wars. Also, the risk of a fiscal crisis—in which investors demanded very high interest rates to finance the government's borrowing—would be greater.

How Uncertain Are the Projected Outcomes?

The projections of federal debt and economic output in this report are highly uncertain, primarily because of the difficulties inherent in projecting the effects of federal fiscal policies. The projections are based on CBO's central estimates for key parameters of economic behavior—including the extent to which government borrowing crowds out capital investment in the long run. Estimates of those and other economic parameters are uncertain, and analysis using different parameters that are well within the range of possible outcomes can produce results substantially higher or lower than CBO's central estimates. For example, consider the ranges of estimates that CBO uses for the crowding out of investment and the responsiveness of the labor supply. Under those ranges, the estimated increase in real GNP per person in 2040 under the paths specified by Chairman Price and his staff, compared with the amount projected under the extended baseline, would be between 3 percent and 10 percent (see Table 2).

This type of analysis is also sensitive to other uncertain factors. As an example, differences in future interest rates would alter the rate at which decreases or increases in deficits would cumulate to differences in debt. Moreover, the macroeconomic effects of the paths specified by Chairman Price and of the three illustrative paths would differ from the estimates reported here because of the particular policies chosen to achieve those budgetary outcomes and how households and businesses responded to those policies.



Appendix: CBO's Approach to the Analysis

The Congressional Budget Office's most recent long-term budget projections were published in January in *The Budget and Economic Outlook: 2016 to 2026*.¹ To project outcomes under the other budget paths in this report, CBO used specifications from Dr. Tom Price, Chairman of the House Budget Committee, and his staff for one scenario. The agency used its own assumptions for three others: two illustrative deficit reduction paths and one illustrative deficit increase path. Those deficit reduction paths are consistent with paths shown in *The 2015 Long-Term Budget Outlook*. (The +\$2 trillion path affects the cumulative deficit, excluding interest payments and macroeconomic effects, over the first 10 years of the projection by amounts similar to those projected for the alternative fiscal scenario presented in that report.)

CBO estimated the effects on economic output, in relation to the agency's extended baseline projections, for all four of those budget paths for the 2017–2040 period. CBO estimated the budgetary implications of the macroeconomic effects by using a simplified analysis that takes into account changes in key economic variables that affect budget outcomes, such as taxable income and interest rates. But that analysis does not incorporate a detailed program-by-program analysis, as CBO typically does for regular budget projections.

Extended Baseline

For the next decade, CBO's most recent extended baseline projections match the 10-year baseline projections for the budget and the economy that the agency released in January 2016. For years after 2026, CBO projected the amount of gross domestic product (GDP) under the extended baseline (without macroeconomic effects) by using the long-term growth rate for GDP underlying the

extended baseline in *The 2015 Long-Term Budget Outlook*. In addition, beyond 2026, the extended baseline is projected using the interest rates and growth rates for revenues and spending from the extended baseline (again, without macroeconomic effects) in *The 2015 Long-Term Budget Outlook*.²

To project spending beyond CBO's 10-year baseline in *The 2015 Long-Term Budget Outlook*, the agency assumed for the extended baseline that spending would generally occur as scheduled under current law.³ (That report reflected the fiscal policies scheduled to be in effect under current law as of June 2015.) CBO also assumed that after the first 10 years, individual income, payroll, excise, and estate and gift taxes would generally continue as specified under current law and that corporate income taxes and other sources of revenues would remain constant as a share of GDP. Under those assumptions, marginal tax rates on labor and capital income would rise over time, as the general growth of income pushed more of taxpayers' income into higher tax brackets.⁴

1. See Congressional Budget Office, *The Budget and Economic Outlook: 2016 to 2026* (January 2016), www.cbo.gov/publication/51129.

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2. CBO plans to release a fully updated extended baseline later this year that will reflect the 10-year budget projections to be released this month.
 3. That assumption has two main exceptions. First, CBO based its projections of spending for Medicare and Medicaid after the first decade on the projected number of beneficiaries and applying fairly mechanical estimates of the growth in spending per beneficiary. Second, CBO assumed that, after the first decade, discretionary spending would remain at the percentage of GDP projected for the end of the first decade because lawmakers' future actions, which CBO could not predict, will determine such spending. For more details, see Congressional Budget Office, *The 2015 Long-Term Budget Outlook* (June 2015), Chapters 2 and 4, www.cbo.gov/publication/50250.
 4. A marginal tax rate is the percentage of an additional dollar of income that is paid in taxes. Labor income is derived from employment (such as wages), whereas capital income is derived from wealth (such as stock dividends, realized capital gains, and owners' profits from businesses).

After projecting fiscal policies under the new extended baseline without economic feedback, CBO incorporated the economic effects and budgetary feedback effects of those fiscal policies. This report discusses that extended baseline with those feedback effects.

How CBO Projected Economic and Budgetary Outcomes Under Different Budget Paths

CBO used two approaches to estimate the macroeconomic effects of the different budget paths: one for the short term and another for the long term.⁵ The estimated macroeconomic effects were determined only by effects on the demand for goods and services in fiscal year 2017, by a combination of those effects and effects on the nation's capital stock and labor supply from 2018 through 2020, and only by the effects on capital stock and labor supply starting in 2021.⁶ The two approaches focus on different aspects of the economy; each approach represents people's economic decisions in a simplified way while capturing some important aspects of actual behavior. CBO then incorporated into the analysis of budgetary outcomes the estimates of economic effects obtained by using those approaches.

The first approach addresses short-term effects that stem largely from variations in the overall demand for goods and services. CBO estimates the short-term economic effects of changes in overall demand by using models and historical evidence to assess how such policies alter the economy directly and indirectly. Direct effects include changes in output caused by changes in the demand for goods and services by the federal government or by the groups directly affected by a policy, such as people who receive a tax cut. Indirect effects enhance or offset the direct effects.⁷

The second approach addresses the long-term economic impact of changes in fiscal policies that stem largely from variations in the supply of labor and capital. To assess those effects, CBO uses a model based on a widely used model originally developed by Robert Solow. In that model, economic output is determined by the number of hours of labor that workers supply, the size and composition of the capital stock (such as factories and computers), and total factor productivity (the combined productivity of labor and capital).⁸ People base their decisions about working and saving primarily on current economic conditions—especially wage levels, interest rates, and government policies. People's responses to changes in such conditions are generally assumed to mirror their past responses to economic and policy developments. Therefore, the responses reflect people's anticipation of future policies generally but not their expectations of specific future events. The analysis in this report also incorporates the assumption that the budget paths do not alter federal investment's contributions to future productivity and output; those contributions are assumed to reflect their past long-term trends.

To incorporate economic effects, or feedback, into the analysis of budgetary outcomes, CBO generally used procedures it has used before for similar long-term analyses.⁹ The agency estimated that increases in output would raise revenues, primarily because income and payroll taxes would rise with higher income. CBO also estimated that, over the long term, increases in output would boost spending for the government's retirement programs (because of formulas in those programs that link benefits to earnings) and spending for health care programs (in keeping with CBO's standard approach for projecting the

5. For a discussion of CBO's analytical methods, see Congressional Budget Office, *How CBO Analyzes the Effects of Changes in Federal Fiscal Policies on the Economy* (November 2014), www.cbo.gov/publication/49494.

6. Specifically, CBO combined results from its modeling approaches as follows: Estimates for fiscal year 2017 were based entirely on short-run economic effects; estimates for fiscal years 2018, 2019, and 2020 place weights of 0.75, 0.50, and 0.25, respectively, on the short-run effects and place the remaining weights on the long-run effects on the capital stock and labor supply; and estimates for fiscal years 2021 and beyond were based entirely on effects on the capital stock and labor supply.

7. For a discussion of how CBO analyzes the short-term effects of changes in fiscal policy on the economy, see Charles Whalen and Felix Reichling, *The Fiscal Multiplier and Economic Policy Analysis in the United States*, Working Paper 2015-02 (Congressional Budget Office, January 2015), www.cbo.gov/publication/49925.

8. For a description of CBO's Solow-type growth model, see Congressional Budget Office, *CBO's Method for Estimating Potential Output: An Update* (August 2001), www.cbo.gov/publication/13250.

9. For examples, see Congressional Budget Office, *The 2015 Long-Term Budget Outlook* (June 2015), Chapter 6, www.cbo.gov/publication/50250, *Budgetary and Economic Outcomes Under Paths for Federal Revenues and Noninterest Spending Specified by Chairman Price, March 2015* (March 2015), www.cbo.gov/publication/49977, and *Macroeconomic Effects of Alternative Budgetary Paths* (February 2013), Appendix A, www.cbo.gov/publication/43769.

long-term growth of health care costs). Decreases in output were estimated to have the opposite effects. For other types of noninterest spending, by contrast, CBO assumed that changes in output do not affect spending in the long run. Over the first five years of the period analyzed, CBO also incorporated budgetary effects stemming from

changes in output that arise from changes in overall demand. According to CBO's estimates, increases in output during that period would reduce spending on programs such as unemployment insurance, whereas decreases in output would have the opposite effect.

About This Document

This Congressional Budget Office report was prepared at the request of the Chairman of the House Committee on the Budget. In keeping with CBO's mandate to provide objective, impartial analysis, the report makes no recommendations.

Stephanie Hugie Barelllo, Devrim Demirel, Jonathan Huntley, Leah Loversky, and Michael Simpson prepared the report or contributed to the analysis, with guidance from Benjamin Page and Julie Topoleski. Linda Bilheimer offered helpful comments.

Wendy Edelberg, Jeffrey Kling, and Robert Sunshine reviewed the report; Gabe Waggoner edited it; and Jeanine Rees prepared it for publication. An electronic version is available on CBO's website (www.cbo.gov/publication/51260).

A handwritten signature in black ink, appearing to read "Keith Hall". The signature is stylized with a large "K" and "H".

Keith Hall
Director

March 2016